

WHAT IS CLAIMED IS:

1. A blanking device in a cutting machine for cutting plate-like elements from a sheet, wherein the elements had previously been shaped in several blanks in the sheet and the blanks are held together in the sheet by a number of nicks, the blanking device comprising:

a lower tool for supporting the sheet, the lower tool having a plurality of openings therein generally shaped, sized and positioned to the blanks on the sheet supported on the lower tool;

an upper tool, and the upper and the lower tools being movable toward and away from each other; the upper tool having a lower surface facing toward the lower tool;

a plurality of telescopable pressing devices at the lower surface of the upper tool positioned and adaptable for holding the sheet on the lower tool and so positioned at the upper tool as to engage the lower tool outward of the openings so as to not block the openings, the pressing devices being adapted to a telescope after contacting the sheet on the lower tool and while the tools are moving toward each other;

a plurality of punches supported at the upper tool on the side facing toward the lower tool shaped for engaging blanks supported at the lower tool with each punch being shaped to pass into the opening of the lower tool as the upper and lower tools move toward each other;

a respective suction device on each of the punches, and a suction source connected with the suction devices adaptable for selectively sucking to hold the blanks to the punches and selectively operable to release the blanks from the punches.

2. The blanking device of claim 1, wherein the lower tool is motionless while the upper tool moves toward and away from the lower tool.

3. The blanking device of claim 1, wherein each of the suction devices comprises a suction cup.

4. The blanking device of claim 3, wherein the suction cup comprises an expansible suction cup expansible and contractible respectively toward and away from the lower tool enabling movement of the upper and lower tools together before the upper tool contacts the sheet on the lower tool.

5. The blanking device of claim 4, wherein the punch has a lower end which contacts the sheet and at least part of the suction cup projects below the lower end of the punch.

6. The blanking device of claim 1, wherein the suction source to the suction device selectively comprises a vacuum source or a pressure source selectively able to generate changes in the air pressure within the suction device, and a distribution network for the vacuum source and the pressure source.

7. The blanking device of claim 6, wherein the distribution network for the vacuum source or pressure source is located above the upper tool.

8. The blanking device of claim 6, wherein the distribution network includes a valve for air control and an air regulation or measuring member.

9. The blanking device of claim 8, further comprising a control unit for operating the distribution network and the vacuum or pressure source.

10. A blanking method for blanking a plate-like blankable sheet which has been cut in several blanks that are maintained together with the sheet by a plurality of nicks, the method comprising:

positioning the previously cut blanks above openings defined in a lower blanking device tool such that the blanks would fit through the openings;

activating suction in suction devices of punches above each of the blanks such that the suction devices would hold the blanks to the punches;

gripping the blanks by the suction devices of the punches; while gripping the blanks, moving the punches of an upper blanking tool toward the openings in the lower tool for the punches to break the nicks between the blanks to separate the blanks from the sheet, and controlling the blanks being separated from the sheet by keeping suction in the suction devices during the rupturing of the nicks;

after rupturing of the nicks with the punches in the openings, changing air pressure at the suction devices to release the blanks from the suction devices so that the blanks might fall on a pile;

then moving the upper tool up out of the openings.

11. The method of claim 10, further comprising moving the sheet, from which the blanks have been separated, outside the position over the openings in the lower tool.

12. The blanking method of claim 10, further comprising pressing the sheet on the lower tool outward of the blanks during the moving of the punches into the openings in the lower tool.

13. The method of claim 12, contacting the sheet by the pressing devices after the blanks have been gripped by the suction devices.

14. The method of claim 10, wherein the changing of the air pressure at the suction devices comprises equalizing the pressure value in the suction devices with that of the surrounding pressure.

15. The method of claim 10, wherein the changing of the air pressure in the suction devices comprises increasing the pressure at the suction devices to be above the value of the room pressure surrounding the device.

16. The method of claim 6, wherein the suction devices comprise collapsible cups which extend beyond the end of the punches, the method further comprising moving the collapsible cups into contact with the blanks before the punches contact the blanks and permitting the collapsible cups to collapse toward the punches until the punches engage the blanks.